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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
ORTIZ, BELIX M	

ART UNIT	PAPER NUMBER
2164	

DATE MAILED: 08/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/061,474	TEIG ET AL.	
	Examiner	Art Unit	
	Belix M. Ortiz	2164	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 May 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Remarks

1. In response to communications files on 15-May-2006, claims 1-2 and 12 are amended per applicant's request. Therefore, claims 1-25 are presently pending in the application.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., In re Berg, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); In re Goodman, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); In re Van Ornum, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); In re Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and In re Thorington, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

   A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

   Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1-2, and 12 provisionally rejected on the ground of nonstatutory double patenting over claims 1 and 20 of copending Application No. 10/062,992 and over claims 1, 15 and 26 of copending Application No. 10/062,017. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter. See also MPEP § 804.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pedersen et al. (U.S. 6,134,705) in view of Moreaux (U.S. patent 6,925,088).

As to claim 1, Pedersen et al. teaches a data storage structure that stores a plurality of combinational-logic sub-networks (see column 11, lines 44-60), wherein each sub-network performs a set of output functions (see column 11-14 and figures 7A-7F, nodes u and v, where sub-netlists perform output functions), and comprises a set of circuit elements (see figures 7A-7D), wherein each sub-network is stored based on a set of indices derived from a set of output functions performed by the sub-network, the set of indices being used to retrieve the sub-network from the data storage structure (see figures

7E-7F; column 1, lines 37-44; column 11, lines 40-60; column 12, lines 10-15; lines 43-45 and column 16, lines 21-39, where performs output functions at nodes u and v).

Pedersen et al. does not teach at least some of the sub-network comprising a first circuit having a first output outside the sub-network and a second circuit having a second output outside the sub-network, wherein the first circuit receives a direct or indirect input from the second circuit.

Moreaux teaches data transmission system for aircraft (see abstract), in which he teaches at least some of the sub-network comprising a first circuit having a first output outside the sub-network and a second circuit having a second output outside the sub-network, wherein the first circuit receives a direct or indirect input from the second circuit (see figures 3, characters 301 and 302).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Pedersen et al. by the teaching of Moreaux, because at least some of the sub-network comprising a first circuit having a first output outside the sub-network and a second circuit having a second output outside the sub-network, wherein the first circuit receives a direct or indirect input from the second circuit, would enable because enhance the flexibility of circuit design such that a more compact of electronic design id possible for flexibility selecting electronic components and decrementing the need of more special hardware.

As to claim 2, Pedersen et al. teaches a data storage structure that stores a plurality of combinational-logic sub-networks (see column 11, lines 44-60), wherein each

sub-network performs a set of output functions (see column 11-14 and figures 7A-7F, nodes u and v, where sub-netlists perform output functions), and comprises a set of circuit elements (see figures 7A-7D), wherein the data storage structure stores each sub-network based on a parameter derived from the set of output functions of the sub-network, the parameter being used to retrieve the sub-network from the data storage structure (see figures 7E-7F; column 1, lines 37-44; column 11, lines 40-60; column 12, lines 10-15; lines 43-45 and column 16, lines 21-39, where performs output functions at nodes u and v).

Pedersen et al. does not teach at least some of the sub-network comprising a first circuit having a first output outside the sub-network and a second circuit having a second output outside the sub-network, wherein the first circuit receives a direct or indirect input from the second circuit.

Moreaux teaches data transmission system for aircraft (see abstract), in which he teaches at least some of the sub-network comprising a first circuit having a first output outside the sub-network and a second circuit having a second output outside the sub-network, wherein the first circuit receives a direct or indirect input from the second circuit (see figures 3, characters 301 and 302).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Pedersen et al. by the teaching of Moreaux, because at least some of the sub-network comprising a first circuit having a first output outside the sub-network and a second circuit having a second output outside the sub-network, wherein the first circuit receives a direct or indirect input from the second

circuit, would enable because enhance the flexibility of circuit design such that a more compact of electronic design id possible for flexibility selecting electronic components and decrementing the need of more special hardware.

As to claims 3 and 14, Pedersen et al. as modified teaches wherein the parameter for each sub-network is a set of indices for storing the sub-network in the storage structure, wherein the set of indices includes an index for each function performed by the sub-network (see Pedersen et al., figures 4A-4B and 7A; column 1, 37-44; column 6, lines 29-35; column 6, lines 54-59; column 9, lines 28-36; and column 9, lines 41-49).

As to claims 4 and 15, Pedersen et al. as modified teaches wherein the indices are numerical indices (see Pedersen et al., column 3, 16-18).

As to claims 5 and 16, Pedersen et al. as modified teaches wherein the storage structure is a relational database, and the set of indices are indices into the relational database (see Pedersen et al., column 11, lines 62-66).

As to claims 6 and 17, Pedersen et al. as modified teaches wherein the set of indices for each sub-network includes a primary index and a set of secondary indices (see Pedersen et al., figure 7D, characters 762, 764, 766, and 776).

As to claims 7 and 18, Pedersen et al. as modified teaches wherein the set of secondary indices for a sub-network that only performs one function is empty (see Pedersen et al., column 14, lines 63-67 and column 15, lines 1-7).

As to claims 8 and 19, Pedersen et al. as modified teaches wherein each sub-network receives a set of inputs, and each sub-network's primary index is the index derived from a pivot function of the sub-network that depends on all the inputs in the sub-network's set of inputs (see Pedersen et al., column 15, lines 10-22).

As to claim 9, Pedersen et al. as modified teaches wherein each sub-network's set of indices specify the location where the sub-network is stored in the data storage structure (see Pedersen et al., column 14, lines 49-62).

As to claims 10 and 22, Pedersen et al. as modified teaches wherein the data storage structure stores each sub-network in terms of

(i) a graph that represents the topology of the set of circuit elements of each sub-network, wherein the graph includes a node for each circuit element of the sub-network,

(ii) a set of local functions that includes a local function for each node of the graph (see Pedersen et al., figure 7A and column 1, lines 37-44, where the sub-netlist (element 700) includes element 702-740, and figure 7E where a set of local functions include the functions at nodes u and v),

wherein the data storage structure stores, for each sub-network, an identifier that

specifies the locations that store the set of local functions and the graph of the sub-network (see Pedersen et al., column 11, lines 62-66),

wherein each sub-network's set of indices is associated with the identifier for the sub-network (see Pedersen et al., figures 4A-4B; column 11, lines 62-66; column 12, lines 10-15; column 12, lines 43-45; column 13, lines 28-38; and column 13, lines 43-54).

As to claims 11 and 23, Pedersen et al. as modified teaches wherein each sub-network's identifier includes a graph index and a set of function indices, wherein, for each sub-network, the graph index identifies the storage location of the graph for the sub-network, and each function index identifies the storage location of a local function of the sub-network (see Pedersen et al., figures 4A-4B; column 6, lines 29-35; and column 6, lines54-59).

As to claim 12, Pedersen et al. teaches a sub-network record management system comprising:

a) a data storage structure that stores a plurality of combinational-logic sub-networks, wherein each sub-network performs a set of output functions (see column 11, lines 44-60), wherein each sub-network performs a set of output functions (see column 11-14 and figures 7A-7F, nodes u and v, where sub-netlists perform output functions), and comprises a set of circuit elements (see figures 7A-7D), wherein the data storage structure stores each sub-network based on a parameter derived from the set of output functions of the sub-network (see figures 7E-7F; column 1, lines 37-44; column 11, lines

40-60; column 12, lines 10-15; lines 43-45 and column 16, lines 21-39, where performs output functions at nodes u and v),

b) a data access manager that identifies and retrieves sub-networks from the data storage structure (see figure 3A, character 314 and column 10, lines 40-50).

Pedersen et al. does not teach at least some of the sub-network comprising a first circuit having a first output outside the sub-network and a second circuit having a second output outside the sub-network, wherein the first circuit receives a direct or indirect input from the second circuit.

Moreaux teaches data transmission system for aircraft (see abstract), in which he teaches at least some of the sub-network comprising a first circuit having a first output outside the sub-network and a second circuit having a second output outside the sub-network, wherein the first circuit receives a direct or indirect input from the second circuit (see figures 3, characters 301 and 302).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Pedersen et al. by the teaching of Moreaux, because at least some of the sub-network comprising a first circuit having a first output outside the sub-network and a second circuit having a second output outside the sub-network, wherein the first circuit receives a direct or indirect input from the second circuit, would enable because enhance the flexibility of circuit design such that a more compact of electronic design id possible for flexibility selecting electronic components and decrementing the need of more special hardware.

As to claim 13, Pedersen et al. as modified teaches wherein when the data access manager receives a parameter, the manager searches the data storage structure for sub-networks that are stored based on the received parameter, and if the manager finds a sub-network that is stored based on the received parameter, the manager retrieves the sub-network (see Pedersen et al., figure 3A, character 314 and column 10, lines 43-50).

As to claim 20, Pedersen et al. as modified teaches wherein when the manager receives a set of indices, the manager searches the data storage structure to find a set of indices that match the received set of indices, and if the manager finds a matching set, the manager retrieves the sub-network identified by the matching set (see Pedersen et al., column 11, lines 23-26).

As to claim 21, Pedersen et al. as modified teaches wherein for each particular index pair formed by the received primary index and one of the received secondary indices (see Pedersen et al., figure 7D, characters 762, 764, 766, and 776),

the manager identifies each sub-network stored in the storage structure that is associated with the particular index pair (see Pedersen et al., figure 4A-4B and column 11, lines 62-66),

the manager then determines whether any of the identified sub-networks are associated with all the index pairs (see Pedersen et al., figure 4A-4B and column 11, lines 62-66), and

if so, the manger retrieves any sub-network that is associated with all index pairs (see Pedersen et al., figure 3A).

As to claim 24, Pedersen et al. as modified teaches wherein at least some sub-networks perform at least tree output functions (see Pedersen et al., figures 7E-7F and column 16, lines 21-39).

As to claim 25, Pedersen et al. as modified teaches wherein at least some sub-networks perform at least tree output functions (see Pedersen et al., figures 7E-7F and column 16, lines 21-39).

Response to Arguments

6. Applicant's arguments filed 25-July-2005 with respect to the rejected claims in view of the cited references have been half considered but they are not found persuasive:

In response to applicants' arguments that "Pedersen et al does not teach a data storage structure that stores a plurality of sub-networks, wherein each sub-network performs a set of output functions, wherein each sub-network performs a set of output functions, wherein each sub-network comprises a set of circuit elements and at least some of the sub-network comprise first circuit having a first output outside the sub-network and a second circuit having a second output outside the sub-network, wherein the first circuit receives a direct or indirect input from the second circuit", the arguments have

been fully considered but are not deemed persuasive, Pedersen et al. teaches on column 11, lines 44-60 where newly and original synthesized sub-netlist are saved and also at column 11-14 and figures 7A-7F, nodes u and v where sub-netlist perform output function.

Moreaux teaches "at least some of the sub-networks comprise a first circuit having a first output outside the sub-network and a second circuit having a second output outside the sub-network, wherein the first circuit receives a direct or indirect input from the second circuit" at Fig. 3 wherein a subnet connects star distributors (elements 301s) and peripheral units or devices (elements 302s). Note the three elements 302s at the most right side in the Figure, as a first circuits, receives direct or indirect input from the two elements 301, the second circuits. Also note the elements 302s and 301s are all outside of the central subnet, the element 320 at the center in the Figure.

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention was made to combine the teaching of Moreaux and Pedersen references for further enhance the flexibility of circuit design such that a more compact of electronic design is possible for flexibly selecting electronic components and decrementing the need of more special hardware.

Conclusion

Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Belix M. Ortiz whose telephone number is 571-272-4081. The examiner can normally be reached on moday-friday 9am-5pm.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

bmo

CHARLES RONES
SUPERVISORY PATENT EXAMINER

July 31, 2006